USGS Aftershock Forecast for the Magnitude 7.8 Nepal earthquake of April 25, 2015 (as of April 27, 2015)

In the coming week, the USGS expects 3-14 M≥5 aftershocks of the magnitude 7.8 Nepal earthquake. Additionally, the USGS estimates that there is a 54% chance of a M≥6 aftershock, and a 7% chance of a M≥7 aftershock during this one-week period. After this, in the following month and then the following year, USGS expects several M≥5 aftershocks, with a significant chance of M≥6 aftershock (greater than 50%). The potential for an aftershock larger than the mainshock remains, but is small (1-2% in each time period).

Felt earthquakes (i.e., those with M≥ 3 or 4) will be common over the next weeks to months. Based on general earthquake statistics, the expected number of M≥ 3 or 4 aftershocks can be estimated by multiplying the expected number of M>=5 aftershocks by 100 or 10, respectively. The expected location of the aftershocks will be in the zone of current activity and at its edges. Currently aftershocks are occurring in a zone extending approximately 200 km away from the mainshock epicenter.

Numerical Forecast:

Forecast Time Window	Magnitude (M) range of aftershocks considered	Range of Expected Number of Aftershocks (95% confidence)	Probability of one or more aftershocks
April 26, 2015, 18:00 UTC to May 03, 2015, 18:00 UTC	M ≥ 5.0	3 - 14	> 99%
	M ≥ 6.0	0 - 3	54%
	M ≥ 7.0	0 - 1	7%
	M ≥ 7.8	0	1%
May 03, 2015 to May 31, 2015	M ≥ 5.0	3 - 13	> 99%
	M ≥ 6.0	0 - 3	52%
	M ≥ 7.0	0 - 1	7%
	M ≥ 7.8	0	1%
May 31, 2015 to May 30, 2016	M ≥ 5.0	8 - 23	> 99%
	M ≥ 6.0	0 - 4	77%
	M ≥ 7.0	0 - 1	14%
	M ≥ 7.8	0	2%

This information is preliminary and subject to change.

Background Information About Aftershocks

Like most earthquakes, the recent earthquake in Nepal is expected to be followed by numerous

aftershocks. Aftershocks are additional earthquakes that occur after the mainshock and in the same geographic area. Usually, aftershocks are smaller than the mainshock, but occasionally an aftershock may be strong enough to be felt widely throughout the area and may cause additional damage, particularly to structures already weakened in the mainshock. As a rule of thumb, aftershocks of magnitude 5 and larger are considered potentially damaging.

Aftershocks are most common immediately after the mainshock; their average number per day decreases rapidly as time passes. Aftershocks are most likely to be felt in the first few days after the mainshock, but may be felt weeks, months, or even years afterwards. In general, the larger the mainshock, the longer its aftershocks will be felt.

Aftershocks tend to occur near the mainshock, but the exact geographic pattern of the aftershocks varies from earthquake to earthquake and is not predictable. The larger the mainshock, the larger the area of aftershocks.